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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,725	12/29/2003	Patricia Chapman Irwin	134756-1	6638
23413	7590	11/30/2006	EXAMINER	
CANTOR COLBURN, LLP 55 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002			JACKSON, MONIQUE R	
		ART UNIT	PAPER NUMBER	
		1773		

DATE MAILED: 11/30/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/747,725	IRWIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Monique R. Jackson	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 14 September 2006.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-11, 13, 15, 16 and 21-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-11, 13, 15, 16 and 21-32 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. The amendment filed 9/14/06 has been entered. Claims 1-11, 13, 15, 16 and 21-32 are pending in the application. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

#### *Specification*

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

A. Claim 9 recites that the insulating layer comprises a thermosetting polymer in an amount of about 50 to about 98 wt%, based on the total weight of the insulating layer”, however, the specification at paragraph 0020 recites that the thermosetting polymer is used in an amount of about 1 to about 50wt%, based on the total weight of the insulating layer.

B. Claim 21 recites that the thickness of the insulating layer is about 25 to 300 micrometers and the electrical breakdown strength is greater than or equal to about 0.75 kilovolt however the specification at paragraph 0055 recites that the “insulating layer has a breakdown voltage of greater than or equal to about 1 kilovolt (kV) at a thickness of about 25 to about 300  $\mu\text{m}$ ”.

C. Claim 22 recites the insulating layer “is corona resistant to an applied voltage of 5000 Volts at a frequency of 3 kilohertz **for a time period over 100 minutes.**” (emphasis added.)

#### *Claim Objections*

3. Claim 4 is objected to because of the following informalities: “polysulfones” is listed twice at line 4 and line 12. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-11, 13, 15, 16, and 21-27 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for an electrically insulating layer comprising a ferritic nanosized filler in an amount of about 2 to about 15wt% based on the total weight of the insulating layer, does not reasonably provide enablement for 0.01 to 30wt% of the ferritic nanosized filler. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims. Though the original disclosure at the time of filing recites in paragraph 0045 that a nanosized filler in general can be used in an amount of 0.01 to 30 wt%, paragraph 0036 clearly recites that when ferritic nanosized fillers are used, such as in the instant claims, they are used in amounts from about 2 to about 15wt%, based on the total weight of the insulating layer. Hence, the broader weight percentage range only applies to non-ferritic nanosized fillers and not those as instantly claimed.

***Claim Rejections - 35 USC § 103***

6. Claims 1-5, 9-11, 13, 15, 16, 21-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takaya et al (US 2002/0132898 or USPN 6,908,960.) As discussed previously, Takaya et al teach an electronic component comprising a copper foil and a cured magnetic layer with low dielectric properties formed from a thermosetting composition comprising a polyvinylbenzyl ether compound and magnetic particles wherein the magnetic

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particles are preferably ferrite particles having a particle size of 0.01 to 100 microns (10nm-100 microns) with preferred ferrite particles being Mn-Mg-Zn, Ni-Zn, or Mn-Zn based systems (reads upon the instantly claimed nanosized filler); and wherein the ratio of the thermosetting resin to the powder is from 100:100 to 100:900 (Col. 8, lines 19-64; Col. 10-Col. 11, line 30; Col. 15, line 4-Col. 16, line 64; Col. 20, lines 30-55; Col. 24, lines 37-67; Col. 25, lines 1-21; Col. 29, line 59-Col. 30, line 4; Col. 31, lines 1-19; Col. 32, line 46-Col. 34, line 28.) Takaya et al also teach that the magnetic particles may have any desired shape including spherical, flat and elliptic (Col. 24, lines 60-64.) Takaya et al further teach that the thermosetting composition may further include other thermosetting resins and silane coupling agents; and that another embodiment may include an insulating layer produced from the thermosetting composition comprising ceramic particles instead of the magnetic particles wherein Takaya et al specifically teach that these particles may include the metal oxides as claimed and have a particle size of inorganic fillers having a particle size range from 0.1 to 100 microns (Col. 6; Col. 8; Col. 20; Col. 22, line 41-Col. 24, line 9.) Takaya et al further teach that the curing temperature may range from 20° to 250°C depending upon the absence or presence of a curing agent and the type of the curing agent, wherein 50° to 250°C is sufficient for full curing (Col. 20, lines 51-55.) Though Takaya et al teach that the ferrite powder is preferably provided in an amount of 50-90wt% based on the total amount of the ferrite powder and the polyvinylbenzyl ether compound, Takaya et al also teach that the composition may further comprise 2-50wt% copolymerizable monomer and from 5 to 90wt% of other blending resins, based on the weight of the polyvinylbenzyl ether compound. Hence, though Takaya et al do not specifically teach that the ferrite particles or the ceramic particles are provided in an amount of 0.01 to 30wt% based on the

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total weight of the insulating layer, Takaya et al provides a suggestion to provide the particles in such an amount given the ranges for the other additive materials taught by Takaya et al, wherein one having ordinary skill in the art at the time of the invention would have been motivated to utilize any amount of the materials disclosed by Takaya et al, utilizing routine experimentation to determine the optimum amount of ferrite or ceramic particles based on the desired end use wherein Takaya et al clearly teach that the amount is a result-effective variable. Further, though Takaya et al teach that the cured composition have excellent dielectric or insulating properties and may be utilized in the electronic industry, Takaya et al does not specifically teach the layer thickness and electric breakdown range as instantly claimed. However, considering the electric breakdown is directly related to the thickness of the insulation layer, one having ordinary skill in the art at the time of the invention would have been motivated to utilize routine experimentation to determine the optimum thickness of the insulation or dielectric layer to provide the desired electric breakdown based on the intended end use of the layer.

***Response to Arguments***

7. Applicant's arguments filed 9/14/06 have been considered but are moot in view of the new ground(s) of rejection.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Monique R. Jackson  
Primary Examiner  
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November 27, 2006